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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,237	05/06/2005	Juan Manuel Tejado	282780U/S8X PCT	3378
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
MARTINEZ, JOSEPH P				
ART UNIT		PAPER NUMBER		
2873				
NOTIFICATION DATE		DELIVERY MODE		
03/18/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

### Office Action Summary

**Application No.**

10/534,237

**Applicant(s)**

TEIJIDO ET AL.

**Examiner**

JOSEPH MARTINEZ

**Art Unit**

2873

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 41-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 41-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 May 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/5508)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2-5-09 has been entered.

### ***Response to Arguments***

Applicant's arguments, see 5-6, filed 2-5-09, with respect to the rejection(s) of claim(s) 46 and 47 under 35 U.S.C. 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Tiao et al. (6318863) in view of Hathaway et al. (5050946) in further view of Li (6587269).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiao et al. (6318863 in view of Hathaway et al. (5050946).

Re claim 46, Tiao et al. teaches for example in fig. 2A, an illumination arrangement, comprising: a solid state light source (202); a light collecting, integrating and re-directing device (220) configured to receive at least a part of emitted light from said solid state light source and to redirect said received light (col. 3, ln. 21-24); and a light coupling mechanism (212) configured to improve coupling efficiency of said emitted light from said solid state light source to said light collecting, integrating and redirecting device (col. 3, ln. 14-17).

But, Tiao et al. fails to explicitly teach the light coupling mechanism includes a refraction index matching means directly coupling the light collecting, integrating and re-directing device to the light source.

However, within the same field of endeavor, Hathaway teaches for example in fig. 5, light coupling mechanism includes a refraction index matching means (107) directly coupling the light collecting, integrating and re-directing device to the light source (fig. 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Tiao et al. with the teachings of Hathaway et al., since it is well known in the art of light pipes to provide refraction index matching means directly coupling the light source and light pipe and in order to eliminate surface reflection, as taught by Hathaway et al. (col. 6, ln. 5-6).

Re claim 47, Tiao et al. teaches for example in fig. 2A, an illumination arrangement, comprising: a solid state light source (202); a light collecting, integrating and redirecting device (220) configured to receive at least a part of emitted light from said solid state light source and to redirect said received light (col. 3, ln. 21-24); and a light coupling means (212) for improving coupling efficiency of said emitted light from said solid state light source to said light collecting, integrating and redirecting device (col. 3, ln. 14-17).

But, Tiao et al. fails to explicitly teach the light coupling mechanism includes a refraction index matching means directly coupling the light collecting, integrating and re-directing device to the light source.

However, within the same field of endeavor, Hathaway teaches for example in fig. 5, light coupling mechanism includes a refraction index matching means (107) directly coupling the light collecting, integrating and re-directing device to the light source (fig. 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Tiao et al. with the teachings of Hathaway et al., since it is well known in the art of light pipes to provide refraction index matching means directly coupling the light source and light pipe and in order to eliminate surface reflection, as taught by Hathaway et al. (col. 6, ln. 5-6).

2. Claims 41-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiao et al. (6318863) in view of Hathaway et al. (5050946) in further view of Li (6587269).

Re claim 41, supra claim 46. Furthermore, Tiao et al. further teaches for example in fig. 2A, said light integrating device (220) is or comprises a plain light pipe (col. 3, ln. 22) in particular a solid integration rod-having a light incidence aperture (220A) and a side wall (wall of 220).

But, Tiao et al. in view of Hathaway et al. fail to explicitly teach said side wall of said light integrated device is provided with a reflecting means as said light coupling and/or guiding improving arrangement or as a part thereof at its outer periphery at least in a neighborhood of said light incidence aperture, and wherein said reflecting means is adapted and/or arrangement so as to reflect light escaping from said light integrating device through the side wall thereof back into said light integrating device.

However, within the same field of endeavor, Li teaches for example in fig. 1 and 5, said side wall of said light integrated device is provided with a reflecting means (60) as said light coupling and/or guiding improving arrangement (arrangement in fig. 1 and 5) or as a part thereof at its outer periphery at least in a neighborhood of said light incidence aperture (col. 4, ln. 14-22), and wherein said reflecting means (60) is adapted and/or arrangement so as to reflect light escaping from said light integrating device (20) through the side wall thereof back into said light integrating device (50; fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Liao et al. in view of Hathaway et al. with the teachings of Li in order to provide a more uniform intensity profile, as taught by Li (col. 4, ln. 16-17).

Re claim 42, supra claim 46. Furthermore, Tiao et al. further teaches for example in fig. 2A, said light integrating device (220) is or comprises a plain light pipe (col. 3, ln. 22) in particular a solid integration rod-having a light incidence aperture (220A), wherein said light incidence aperture (220A) of said light integrating device (220) is positioned in a neighborhood (fig. 2A) of a light exit aperture (212B) of said light mixing devices (212).

But, Tiao et al. in view of Hathaway et al. fail to explicitly teach between said light incidence aperture of said light integrating device and said light exit aperture of said light source device or of said light mixing devices refraction index matching means is or are provided, in particular filling a gap or a gap structure between said light incidence aperture of said light integrating device and said light exit aperture of said light source device and/or light mixing devices.

However, within the same field of endeavor, Li teaches for example in fig. 1 and 5, between said light incidence aperture (501) of said light integrating device (50) and said light exit aperture of said light source device or of said light mixing devices (30) refraction index matching means (col. 5, ln. 39-45) is or are provided, in particular filling a gap or a gap structure (70) between said light incidence aperture (input of 20 and 50)

of said light integrating device (20, 50) and said light exit aperture of said light source device (120) or light mixing devices (30).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Liao et al. in view of Hathaway et al. with the teachings of Li in order to provide a more uniform intensity profile, as taught by Li (col. 4, ln. 16-17).

Re claim 43, Li further teaches for example in fig. 1 and 5, wherein said refraction index matching means is a liquid, gel, and/or a glue (col. 5, ln. 42-44).

Re claim 44, Li further teaches for example in fig. 1 and 5, wherein said refraction index matching means has a refraction index which essentially coincides with the refraction index of the material of said light integration device or with the refraction index of the material of the light source devices periphery (col. 5, ln. 42-44; wherein the examiner interprets the refractive index of the "low index epoxy or other transparent material such that the total internal reflection still occurs" to teach a refraction index which essentially coincides with the refraction index of the material of said integration device).

Re claim 45, Li further teaches for example in fig. 1 and 5, wherein said light integration device (20, 50) is or comprises a hollow light pipe (col. 4, ln. 25) having a light incidence aperture (input of 20 and 50), wherein said light incidence aperture of



said light integrating device (20, 50) is positioned in a neighborhood of a light exit aperture (fig. 5) of said light source device (120) or of said light mixing devices (30) and wherein a second or end section in the neighborhood of said light incidence aperture (input of 20 and 50) and/or being terminated by said light incidence aperture (input of 20 and 50) is - in particular completely - filled with a plain light pipe section (20 or 50), in particular for matching the respective refraction indices (col. 4, ln. 30-33; wherein the examiner interprets 20 and 50 could be made from the same material).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph P. Martinez whose telephone number is 571-272-2335. The examiner can normally be reached on M-F 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Art Unit: 2873

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/Joseph Martinez/  
Primary Examiner  
AU 2873  
3-12-09